



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, ILLINOIS 60604

**September 24, 2013**

Mr. David A. Noble  
City Engineer/Director of Community Development  
City of Ottawa  
301 W. Madison Street  
Ottawa, Illinois 61350

RE: City of Ottawa – Brownfield Assessment  
Cooperative Agreement # BF00E01087-0  
Amended Sampling Analysis Plan Approval – Former Central School Properties

Dear Mr. Noble:

I have reviewed both your revised site specific Sampling Plan [dated September 17, 2013] for the Former Central School Properties located at 400 Clinton Street, Ottawa, Illinois. Based on both the approved QAPP prepared by Fehr-Graham & Associates, LLC; and April 18, 2013 approved Sampling Analysis Plan for the above referenced site it appears that you are ready to start sampling as planned.

Please contact me if anything changes or if you have any questions. Don't forget to send me copy of the reports and update the ACRES database with the property profile form for this site.

Thanks.

***Romona R. Smith***

Romona R. Smith  
Brownfields Project Manager/Officer

cc: Rob Wilhelmi, Project Manager, Fehr Graham

## Smith, Romona

---

**From:** Joel Zirkle [JZirkle@fehr-graham.com]  
**Sent:** Tuesday, September 17, 2013 2:20 PM  
**To:** Smith, Romona  
**Cc:** Rob Wilhelmi; Dave Noble (cityengineer@cityofottawa.org)  
**Subject:** City of Ottawa - Central School Amended SAP - (2012 Community-Wide Assessment Grant) BF- 00E01087-0  
**Attachments:** JPZ 12-569H-A04B - Central School Amended SAP.pdf; JPZ 12-569H-A04B - Central School Amended SAP.doc

Romona,

Attached is the amended SAP that include using excavation for some soil sampling. The PDF is the full report and the WORD document allows you to see the edits from the original plan. We would like to conduct additional sampling and testing late this month or in very early October. So we would welcome your feedback on this amend SAP.

Sincerely,

**JOEL P. ZIRKLE, P.G. I Principal**  
**Fehr Graham**  
200 Prairie Street  
Suite 208  
Rockford, Illinois 61107  
P: 815.394.4700  
F: 815.394.4702  
C: 815.238.0037  
[www.fehr-graham.com](http://www.fehr-graham.com)

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**From:** Carolle Duncan  
**Sent:** Tuesday, September 17, 2013 11:05 AM  
**To:** Joel Zirkle  
**Subject:** Central School Amended SAP

## Smith, Romona

---

**From:** Rob Wilhelmi [RWilhelmi@fehr-graham.com]  
**Sent:** Monday, September 23, 2013 4:15 PM  
**To:** Smith, Romona  
**Cc:** Dave Noble (cityengineer@cityofottawa.org)  
**Subject:** RE: City of Ottawa - Central School Amended SAP - (2012 Community-Wide Assessment Grant) BF- 00E01087-0

Hi Romona,

I just wanted to follow up on your review status of the Amended SAP that Mr. Joel Zirkle provided you on the 17<sup>th</sup> (please see email below). The onsite demolition contractor has an open window that they can complete the work in over the next couple weeks and we would like to take advantage of the opportunity if possible. This would greatly benefit the project timeline.

Thank you,

**ROBERT WILHELMI | Project Manager**  
**Fehr Graham**  
200 Prairie Street  
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Rockford, Illinois 61107  
P: 815.394.4700  
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**From:** Joel Zirkle  
**Sent:** Tuesday, September 17, 2013 2:20 PM  
**To:** Smith.Romona@epa.gov  
**Cc:** Rob Wilhelmi; Dave Noble (cityengineer@cityofottawa.org)  
**Subject:** City of Ottawa - Central School Amended SAP - (2012 Community-Wide Assessment Grant) BF- 00E01087-0

Romona,

Attached is the amended SAP that include using excavation for some soil sampling. The PDF is the full report and the WORD document allows you to see the edits from the original plan. We would like to conduct additional sampling and testing late this month or in very early October. So we would welcome your feedback on this amend SAP.

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**From:** Carolle Duncan  
**Sent:** Tuesday, September 17, 2013 11:05 AM  
**To:** Joel Zirkle  
**Subject:** Central School Amended SAP

# AMENDED SAMPLING AND ANALYSIS PLAN

Former Central School Properties  
400 Clinton Street  
Ottawa, Illinois 61350

CA No. BF-00E01087-0

Project No.: 12-569H-A04B and 13-280

September 16, 2013

**FEHR GRAHAM**  
ENGINEERING & ENVIRONMENTAL

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200 Prairie Street, Suite 208

Rockford, Illinois 61107

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Prepared for:

City of Ottawa

301 West Madison Street

Ottawa, Illinois 61350

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[www.fehr-graham.com](http://www.fehr-graham.com)

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### Appendices

Appendix 1 - Site Vicinity Map

Appendix 2 - Site Plan

Appendix 3 - Proposed Sampling Plan

SAP Distribution List

Copy No.	Name/Title	Phone
1	Romona Smith - USEPA Project Manager	(312) 886-6139
2	Dave Noble - City of Ottawa City Engineer	(815) 433-0161, Ext. 20
3	Mike Sutfin - City of Ottawa Building and Zoning Official	(815) 433-0161, Ext. 19
4	Robert Wilhelmi - Fehr Graham Project Manager	(815) 394-4700 - Office (815) 821-3592 - Cell

## 1.0 INTRODUCTION AND BACKGROUND

This Amended Sampling and Analysis Plan (SAP) is submitted in response to ongoing Brownfields initiative work conducted by the City of Ottawa, Illinois at a valuable redevelopment project site located at 400 Clinton Street. The site is currently owned by the City of Ottawa and is located adjacent to the Illinois River, immediately south of the City's downtown commercial district. The site contains two (2) land parcels, referred to as Parcel A and Parcel B, which total approximately 16.7 acres. A Site Vicinity Map showing the location of the site is provided in Appendix 1.

The site currently contains the former Central Elementary School with its associated athletic track and field and playground areas. The Ottawa River Rescue Squad currently operates out of a small structure at the southeast corner. The school building has been vacant since September of 2008, when a critical flooding event occurred as a result of rainfall associated with Hurricane Ike. The school was damaged beyond repair and condemned. It is scheduled to be demolished during the summer months of 2013. Using the City of Ottawa's 2008 Brownfields Assessment Grant Funds, Fehr Graham conducted an AAI compliant Phase I ESA (dated December 6, 2012) prior to the City purchasing the parcels in early February of 2013. The Phase I ESA identified the following Recognized Environmental Conditions (RECs):

- Historical groundwater contamination of the shallow and deep groundwater bearing units on Parcel A of the *property* that is not covered under the existing NFR Letter for the former Municipal Gas Plant Remediation Site.
- Detected soil contamination on Parcel A and the northern and eastern areas of Parcel B that exceeds TACO Tier 1 Soil Remediation Objectives and established area background concentrations. Detected contaminants include benzene, arsenic, and several polynuclear aromatic hydrocarbons.
- A former "chemical house" associated with the Illinois Starch Company's factory that was identified as operating at the north-central region of the *property* in the middle 1870s.
- A historical gasoline tank is depicted at the north-central region of the *property* in a Sanborn map dated 1925.
- The likely use of rodenticides at the former Norris Grain Elevator that is depicted as operating at the southeast corner of the *property* on a 1947 Sanborn map.
- An out-of-service heating oil underground storage tank system currently located at the northeast corner of the vacant school building.

Several previous Phase II investigations have occurred on the parcels as a result of past land uses. A former municipal gas plant formerly operated on the track and field area of Parcel B from approximately 1872 - 1931. The track and field area was assessed and cleaned up with Nicor Gas serving as the Remediation Applicant. A No Further Remediation (NFR) letter was issued by the Illinois Environmental Protection Agency's (IEPA) Site Remediation Program (SRP) on January 3, 2007. However, the NFR letter only covers the track and field area and it is believed that additional soil and groundwater contamination may remain on other areas of the site as a result.

Additional investigation activities were completed on behalf of the Ottawa Elementary School District in 2008 and 2009, which identified the presence of Polynuclear Aromatic Hydrocarbons (PNAs) and metals in a series of collected soil samples.

The primary goal of the project is to thoroughly assess the environmental concerns through a flexible Sampling and Analysis Plan (SAP), which will allow for cleanup activities to be completed in an efficient and effective means, if required. At this time, the City's 2012 USEPA Hazardous Substance Brownfields Assessment Grant Funds will only be used for the investigation activities proposed for Parcel B. Assessment activities for Parcel A will be funded through the Hurricane Ike Disaster Recover Planning Program, which is administered through the Illinois Department of Commerce and Economic Opportunity. However, proposed investigation activities for both Parcels A and B are included in this SAP in order for investigation procedures and protocol to remain consistent over the entire site. Completed work will be strictly tracked and invoiced appropriately. The awarded Hurricane Ike Disaster Recovery Planning funds are only eligible for the former school building and immediately surrounding area that make up Parcel A. The Brownfields Assessment Grant funds are supplemented for the remainder of the site referred to as Parcel B.

Parcels A and B will be enrolled into the into the IEPA's SRP as a single site, with exception to the track and field area that already has a NFR letter. A Comprehensive NFR letter for residential use is the ultimate end goal. At this time, the riverfront property is proposed to be redeveloped into recreational green space for festival ground and for other approved public events. In addition, the City may support some degree of mixed commercial/ residential reuse on portions of the site if a favorable redevelopment plan were to surface.

Table 1 provides further details related to the Parcels. A Site Plan is provided in Appendix 2 for visual reference.

**Table 1 - Parcel Detail**

	<b>Parcel A</b>	<b>Parcel B</b>
<b>Size</b>	Approximately 4.5 acres	Approximately 12.2 acres
<b>Past Uses</b>	<ul style="list-style-type: none"> <li>• Central Elementary School facility and playground areas (-1957 - 2008)</li> <li>• Clay tile/brick manufacturing, starch mills (pre-1875 - 1955)</li> </ul>	<ul style="list-style-type: none"> <li>• Athletic track and field / playground areas (-1957 - 2008)</li> <li>• Ottawa River Rescue Squad (1966 - current)</li> <li>• Grain elevator (-1930s - 1960s)</li> <li>• Clay tile/brick manufacturing, starch mills, machine shop (pre-1875 - 1955)</li> <li>• Municipal Gas Plant (1872 - 1931)</li> </ul>
<b>Funding Source</b>	Hurricane Ike Disaster Recover Planning Program	USEPA Hazardous Substance Brownfields Assessment Grant Funds

The intent of this SAP is to provide a flexible plan for soil and groundwater sampling activities to evaluate if contaminant impacts are present as a result of the RECs. Subsequent sampling events may be required, based on the results of the initial sampling described in this SAP. We will continue to follow our prior approved Quality Assurance Project Plan (QAPP) that was submitted to the United States EPA (USEPA) and has underwent annual updates to maintain compliance with current sampling methods. The QAPP's primary objective is to describe the personnel, procedures, and methods for ensuring the quality, accuracy, and precision of the data associated with the City of Ottawa's Brownfields Assessment Program. An electronic CD copy of the QAPP is available in the field via laptop or electronic note pad to reference all Standard Operating Procedures (SOPs).

## **2.0 SAMPLING DESIGN STRATEGY**

### **2.1 Sampling Location**

Based on the Phase I ESA, a number of RECs were identified on the property, as previously presented. Tables 2 and 3 summarize the proposed soil boring, test pits, and groundwater monitoring well locations in relation to the RECs, the sample collection rationale and proposed depth, along with the proposed constituents subject to laboratory analysis. The soil boring identification numbers correlate to the Proposed Sampling Plan provided in Appendix 3.

**Table 2**  
**Parcel A Soil Boring, Test Pit, and Groundwater Monitoring Well Rationale**

Boring/Well ID	Location	Proposed Depth (ft)	Soil Sample Collection Rationale, Depth, and Miscellaneous Information	Contaminants of Concern Soil Analysis Parameters	Groundwater Analysis Parameters	Notes / Recognized Environmental Condition (REC)	Total Soil Samples	Total Groundwater Samples
SB2	TBD (at Aires SB-2)	0.5 - 3.25'	Collect at Aires SB-2 soil boring location. Collect a composite sample to characterize shallow soil conditions and demonstrate compliance relative to the ingestion exposure route.	TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		1.5' or TBD	Collect at Aires SB-2 soil boring location. Collect a single discrete VOC sample at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1.5'.	TCL VOCs	none	Historical Site Use	1	0
SB3	TBD (at Aires SB-3)	TBD (Between 0.5 - 3.25')	Collect at Aires SB-3 location. Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination or presence of non-native fill. If no evidence or PID readings are present, sample at .5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB4	TBD (at Aires SB-4)	0.5 - 3.25'	Collect at Aires SB-4 soil boring location. Collect a composite sample to characterize shallow soil conditions and demonstrate compliance relative to the ingestion exposure route.	TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		1.5' or TBD	Collect at Aires SB-4 soil boring location. Collect a single discrete VOC sample at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1.5'.	TCL VOCs	none	Historical Site Use	1	0
SB5	TBD (at Aires SB-5)	TBD (Between 0.5 - 3.25')	Collect at Aires SB-5 location. Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination or presence of non-native fill. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB6	TBD (at Aires SB-6)	0.5 - 3.25'	Collect at Aires SB-6 soil boring location. Collect a composite sample to characterize shallow soil conditions and demonstrate compliance relative to the ingestion exposure route.	TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		1.5' or TBD	Collect at Aires SB-6 soil boring location. Collect a single discrete VOC sample at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1.5'.	TCL VOCs	none	Historical Site Use	1	0
		12.5 - 13.5'	Collect at Aires SB-6 soil boring location. Collect a single discrete sample for pH at a location between 12.5 - 13.5'. Collect enough sample to fill a 9 oz glass jar for potential SPLP analysis.	pH	none	Historical Site Use / Previously detected Arsenic contamination	1	0
SB11	TBD (at BV SP126)	TBD (Between 0.5 - 3.25')	Collect at Black & Veatch SP126 soil boring location. Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination or fill materials. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB12	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1 - 2'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0

**Table 2**  
**Parcel A Soil Boring, Test Pit, and Groundwater Monitoring Well Rationale**

Boring/Well ID Test No.	Location Coordinates	Proposed Depth (ft) Groundwater Interval	Proposed Sample Collection Narrative, Depth, and Miscellaneous Information	Parameters of Concern		Notes, Access, Environmental Conditions (REG, etc.)	Total Soil Samples	Total Groundwater Samples
				Soil Analysis Parameters	Groundwater Analysis Parameters			
SB13	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1 - 2'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB14	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB15	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1 - 2'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB16	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 2 - 3'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		1' or TBD	Collect a single discrete VOC sample at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 1'.	TCL VOCs	none	Historical Site Use	1	0
SB17	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 2 - 3'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB18	TBD	TBD	Advance boring and well as close to exterior school wall as possible. Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Actual sample interval may be deeper due to presence of crawlspace beneath building. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination or fill materials.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	UST depicted on 1925 Sanborn Map and Historical Site Use	1	0
SB19	TBD	TBD	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Actual sample interval may be deeper due to presence of crawlspace beneath building. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination or fill materials.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0

**Table 2**  
**Parcel A Soil Boring, Test Pit, and Groundwater Monitoring Well Rationale**

Boring/Well ID No.	Location Coordinates	Proposed Depth (ft)	Proposed Sample Collection Interval, Depth, and Miscellaneous Information	Contaminants of Concern		Notes / Recognized Environmental Condition (REG)	Total Soil Samples	Total Groundwater Samples
				Soil Analysis Parameters	Groundwater Analysis Parameters			
SMW01	Install at SB11 location	TBD	Benzene/Ethylbenzene historically exceeded Class I GW RO in shallow GW in BV SP126. GW historically encountered at 10' bgs with auger refusal at 19' bgs.	none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	Historical groundwater contamination	0	1
SMW03	Install at SB-3 location	TBD	Odor present in previous soil boring SB-3 from 8 - 16' bgs.	none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	Historical soil odor within presumed groundwater table.	0	1
SMW05	Install at SB18 location	TBD	Install as close to exterior wall of school as possible.	none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	UST depicted on 1925 Sanborn Map	0	1
SMW11	Install at BV SMW11 location	TBD	BV SMW11 previously set at 23.5' bgs, screened from 18.5 - 23.5' bgs. Historically GW ~10' bgs in SMW11. VOCs/SVOCs/Metals historically exceeded Class I GW RO in shallow GW.	none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	Historical groundwater contamination	0	1

Composite Samples  
 BGS - Below Ground Surface  
 BV - Black & Veatch (Previous Consultant)  
 GW - Groundwater  
 MGP - Municipal Gas Plant  
 PID - Photoionization Detector  
 PCB - Polychlorinated Biphenyls  
 RO - Remediation Objective  
 SVOC - Semi Volatile Organic Compound  
 TBD - To Be Determined  
 TCL - Target Compound List  
 UST - Underground Storage Tank  
 VOC - Volatile Organic Compound

**Table 3**  
**Parcel B Soil Boring, Test Pit, and Groundwater Monitoring Well Rationale**

Boring Well ID	Location	Proposed Depth	Proposed Sample Collection Rationale, Depth and Miscellaneous Information	Contaminants of Concern		Notes / Parcel Use	Total Soil Samples	Total Groundwater Samples
				Soil Analysis Parameters	Groundwater Analysis Parameters			
SB20	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors or physical evidence of VOC contamination or fill materials. If no evidence or PID readings are present, sample at 1 - 2'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB21	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB22	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB23	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 2 - 3'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB24	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB25	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB26	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors or physical evidence of VOC contamination or fill materials. If no evidence or PID readings are present, sample at 1.5 - 2.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
SB27	TBD	TBD (Between 0.5 - 3.25')	Collect a single discrete sample from a 1' interval at a location between 0.5 - 3.25'. Sample at highest PID reading or based on presence of VOC odors and/or physical evidence of VOC contamination. If no evidence or PID readings are present, sample at 0.5 - 1.5'.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Historical Site Use	1	0
		TBD (Between 3.25 - GW)	Collect a single discrete sample from a 1' interval at a location above the groundwater table but below 3.25'. Sample at highest PID reading or based on presence of VOC odors, physical evidence of contamination, or if non-native fill is present.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	none	Former Grain Elevator Area	1	0

**Table 3**  
**Parcel B Soil Boring, Test Pit, and Groundwater Monitoring Well Rationale**

Sample Type	Location	Proposed Depth (m)	Proposed Sample Collection Rationale, Depth, and Interval and/or Information	Contaminants of Concern		Notes/Recommended Environmental Condition	Total Soil Samples	Total Groundwater Samples
				Soil Analysis	Groundwater Analysis			
SMW02	Install at BV SB02/SMW02 location	TBD	Original SMW02 set at 17' bgs, screened from 12 - 17' bgs. Historically GW -9' bgs. BTEX/SVOCs/Metals historically exceeded Class I GW RO in shallow GW.	none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	Historical groundwater contamination	0	1
SMW04	Install at SB21 location	TBD		none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	Presumed upgradient location.	0	1
SMW06	Install at SB26 location	TBD		none	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	Presumed downgradient groundwater flow location.	0	1
Duplicate Sample	TBD	NA	Collect duplicate soil sample from same interval as a shallow soil sample location.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	QA/QC - 1 duplicate per 20 samples for each soil and groundwater	1	1
Matrix Spike/Matrix Spike Duplicate	TBD	NA	Collect MS/MSD soil sample from same interval as a shallow soil sample location.	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	QA/QC - 1 MS/1 MSD per 20 samples for each soil and groundwater	2	2
Equipment Blank	TBD	NA	Collect between samples or at end of each day	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides, pH	TCL VOCs, TCL SVOCs, TCL PCBs, TCL Inorganics, TCL Pesticides	QA/QC - 1 equipment per 20 samples for each soil and groundwater	1	1
Trip Blank	TBD	NA	To be shipped with VOC samples in cooler	NA	NA	QA/QC - 1 trip blank per cooler containing samples for VOC analysis for water and soil samples	NA	NA
Preservative Blank	TBD	NA	To be shipped with samples in cooler	NA	NA	QA/QC - 1 per site or per lot of bottles analyzed for VOC soils	NA	NA

BGS - Below Ground Surface  
 BV - Black & Veatch (Previous Consultant)  
 GW - Groundwater  
 MGP - Municipal Gas Plant  
 PID - Photoionization Detector  
 PCB - Polychlorinated Biphenyls  
 RO - Remediation Objective  
 SVOC - Semi Volatile Organic Compound  
 TBD - To Be Determined  
 TCL - Target Compound List  
 UST - Underground Storage Tank  
 VOC - Volatile Organic Compound

The soil borings will be completed using a hydraulic push Geoprobe equipped with a macrocore sampler. A minimum of one soil sample from each proposed soil boring will be collected for laboratory analysis at a depth where contamination is most likely to occur with respect to the specific REC or where contamination has previously been detected. Fill material is expected to be encountered that can make obtaining soil samples from conventional drilling difficult. As a result, several proposed sampling locations and subsequent delineation sampling may be done with an excavator. This method will better allow us to collect the needed soil samples and identify the extent of the fill material for sampling as needed. Typically, soil samples will be collected from the upper 1 meter (or 3.25 feet) below ground surface to evaluate the soil ingestion exposure route, in accordance with the requirements of the Illinois Environmental Protection Agency (IEPA) Site Remediation Program (SRP). Deeper samples may also be warranted to fully characterize site conditions or at locations of underground and aboveground storage tanks (ASTs/USTs) if readings from a Photoionization Detector (PID) suggest that a greater concentration of contamination exists. Therefore, at some locations, two soil samples may be collected. The collected soil samples will be analyzed for constituents that are located on the IEPA's Target Compound List (TCL) of parameters. All analytical results will be compared to the IEPA's Tiered Approach to Corrective Action Objectives (TACO) to evaluate site conditions and determine if enrollment into an IEPA cleanup program is necessary.

To ensure the investigation occurs at locations most likely to be impacted by RECs or where contamination has been identified by previously completed soil borings, location coordinates will be developed using CAD software for each location. Prior to the investigation, a survey crew will stake these locations in the field with labeled survey lath. Any deviations from the staked locations will be noted in the field and the final location drawing adjusted accordingly. The completed borings and monitoring wells will be plotted on a scaled image. The proposed locations are subject to change pending the identification of subsurface utilities, the presence of subsurface anomalies, and/or other limitations or discoveries encountered during sampling activities. Upon installation of the monitoring wells, a survey crew will collect final location and elevation data to accurately evaluate groundwater flow direction.

At this time, a total of seven (7) permanent stickup-style groundwater monitoring wells are proposed. Four (4) wells are to be installed on Parcel A and three (3) wells on Parcel B. The wells will consist of 2-inch PVC riser and slotted screen pipe and are proposed to be sampled using low flow technologies, as later described in the SAP. SLUG testing in order to determine hydraulic conductivity is also proposed. We anticipate that the proposed wells will be sufficient to evaluate shallow groundwater conditions. The wells will also be used to determine if a deeper groundwater investigation is warranted below bedrock. Previously completed soil boring logs identify the St. Peters Sandstone Formation as the primary bedrock unit below the site, beginning at approximately 15 - 20 feet below ground surface. The boring logs show the initial shallow groundwater table beginning at approximately 10 feet below ground surface and moving in a southerly direction towards the Illinois River. Upon the issuance of a NFR letter, all groundwater wells will be abandoned in accordance to the Illinois Water Well Code. Drilling activities are proposed to be completed by a reputable drilling contractor through Fehr Graham. All samples will be analyzed by Prairie Analytical Systems in accordance with our QAPP.

## **2.2 Sampling Methods**

### **2.2.1 Soil**

Based on the historical soil boring logs, a wide variety of non-native fill materials are expected to be encountered throughout the site. The materials are likely related to past site uses and consist of ash/cinders and broken brick and clay intermixed with various compositions of sand, silt, and clay. Please refer to the City's USEPA approved Quality Assurance Project Plan (QAPP) for all soil sampling methods and Standard Operating Procedures (SOPs) that will be adhered to.

### **2.2.2 Groundwater**

Permanent stickup style groundwater monitoring wells are proposed to be installed to allow for the collection of groundwater samples at the previously specified locations. Stickup style wells are proposed to protect the installed wells from demolition activities that will be occurring on the site over the summer months. Based on the historical boring logs from previous investigations that have occurred on the site, the initial shallow groundwater table is expected to begin at approximately 10 feet below ground surface. Groundwater flow direction is in a southerly direction towards the adjacent Illinois River. The 2-inch PVC wells

will be installed no deeper than the bedrock encountered at each location to ensure no potential vertical contaminant migration pathway is created. Groundwater will be sampled using low-flow technologies in accordance with our SOPs that are included in the City's USEPA approved QAPP. Specific details associated with the installation and sampling of the monitoring wells is presented below.

#### **2.2.2.1 Monitoring Well Installation**

Please refer to the USEPA approved QAPP for all groundwater monitoring well installation guidelines and SOPs.

#### **2.2.2.2 Well Development**

Please refer to the USEPA approved QAPP for all groundwater monitoring well development guidelines and SOPs.

#### **2.2.2.3 Groundwater Monitoring Well Sampling**

The groundwater monitoring wells will be developed and sampled following the SOPs provided in the USEPA approved QAPP.

### **2.2.3 Hydrogeology**

The local hydrogeology of a site can significantly affect the fate and transport of various contaminants. Completed 2-inch monitoring wells will be surveyed to provide horizontal and vertical control on the top of the well casings to determine accurate groundwater elevations. Water levels measured in the field can then be used to contour the groundwater table. By contouring the groundwater table, groundwater flow direction and hydraulic gradient can be determined. All surveying and groundwater contouring activities will follow the SOPs presented in the USEPA approved QAPP. Equally important to assessing contaminant fate and transport at a site is an estimation of the hydraulic conductivity of the shallow saturated soils. To determine hydraulic conductivity, slug tests will be conducted as per the SOPs presented in the USEPA approved QAPP. The Bouwer-Rice method will be used to interpret the field data.

### **3.0 QA/QC SAMPLE REQUIREMENTS**

The number of field QA/QC samples will be collected in accordance with the approved QAPP. Table 4 summarizes the QA/QC samples for the initial soil and groundwater sampling activities for Parcel B. The requirements are also present on Table 3 for quick user reference. One of the sampling locations will be sampled in duplicate as proposed, and another in triplicate to provide the additional sample volume for the Matrix Spike / Matrix Spike Duplicate (MS/MSD) analysis.

**TABLE 4**  
**QA/QC Sample Requirements**

	QC Sample Type	Frequency of Sample/Analysis	Details
<b>Field Samples</b>	Duplicate Samples	1 duplicate per 20 samples per matrix, or 1 duplicate per sample matrix if fewer than 20 samples	Duplicate sample to be collected by the same methods at the same time as the original sample. Used to verify sample and analytical reproducibility.
	Equipment Blanks	1 equipment blank per 20 samples, minimum 1 equipment blank per day per sample matrix	Distilled water placed into contact with sampling equipment. Used to assess quality of data from field sampling and decontamination procedures.
	Trip Blanks	1 trip blank per cooler containing samples for VOC analysis for water and soil samples	Laboratory prepared organic-free blank to assess potential contamination during sample container shipment and storage.
	Preservative Blanks	1 preservative blank per site or per lot of bottles analyzed for VOC soils	If soil VOC samples are to be preserved with methanol and/or sodium bisulfate, one set of preserved vials will be included to assess potential contamination during sample container shipment and storage.
	Field Blanks	1 field blank per day per sample matrix when equipment blanks are not collected	Distilled water placed into sample jars when all disposable sampling equipment is used and equipment blanks are not collected. Used to assess potential contamination during field sampling activities.
	Matrix Spike/ Matrix Spike Duplicate	1 MS/MSD per 20 or fewer samples per matrix	Laboratory spiked sample to evaluate matrix and measurement methodology.
<b>Internal Lab Samples</b>	Method Blanks	1 method blank per batch of samples prepared, or per lab SOP	Laboratory blank sample to assess potential for contamination from laboratory instruments or procedures.
	Laboratory Control Samples and Duplicates	Analyzed as per method requirements and laboratory SOPs	Evaluates laboratory reproducibility.

## 4.0 ANALYSIS STRATEGY

Multiple RECs have been identified at the site as previously described. Accordingly, the initial sampling strategy will be to analyze samples for the contaminants of concern that are located on the IEPA's TCL of contaminants. In summary, soil investigation and sampling will be conducted first, followed by the groundwater investigation. Additional subsequent investigations may be warranted based upon the initial sample results. Furthermore, a 12,000 gallon heating oil UST is currently located on Parcel A and is scheduled to be removed during the demolition process. UST closure samples will be required at that time, which will be covered by the Hurricane IKE Disaster Recover Planning Program. Nevertheless, all subsequent investigation activities will remain consistent with our SAP and our USEPA approved QAPP.

## 5.0 SITE INVESTIGATION BEST MANAGEMENT PRACTICES

The need for site investigation is common and can occur at all points during the assessment and cleanup process. Consideration of green assessment and remediation options during the early phases of the project will help reduce cumulative environmental footprints of a cleanup and redevelopment. A green site investigation relies on information gained from a thorough preliminary assessment that identifies target areas and site conditions through minimally intrusive techniques. Use of innovative field analytics and direct sensing tools can reduce the environmental footprint of follow-on characterization or cleanup activities, particularly by limiting mobilizations in the field and increasing the density of analytical data.

A review of USEPA's *Green Remediation Best Management Practices: Site Investigation* factsheet (EPA 542-F-09-004) was completed in order to identify any best management practices (BMPs) that could be applied to this investigation. The following BMPs are proposed for this particular investigation.

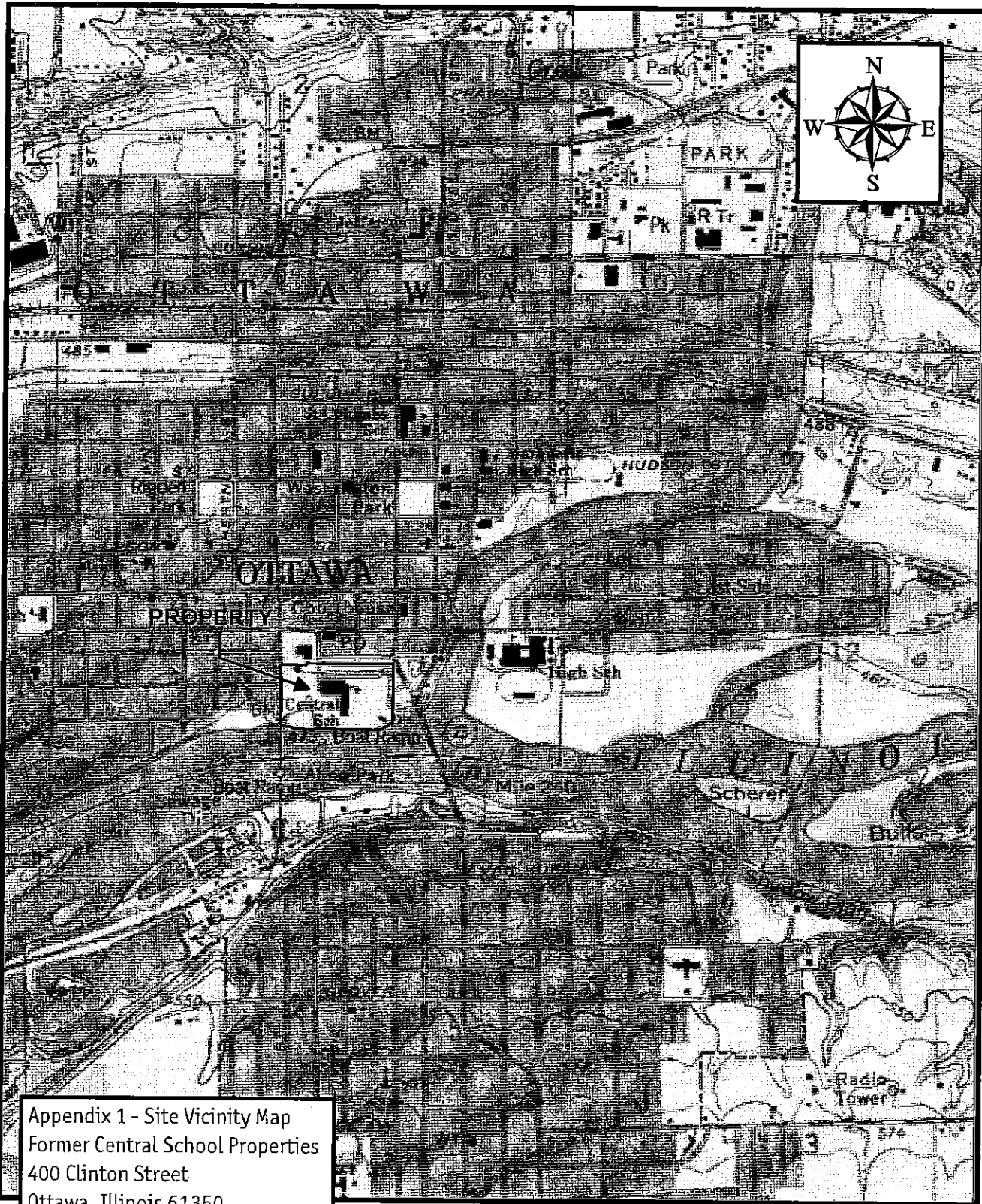
- As previously proposed, we have developed a well-conceived SAP that can help assure that collected data is truly representative of the actual site conditions. Collection of representative data during the first round of field activities will reduce the need for subsequent sampling.
- All battery operated equipment will utilize rechargeable batteries and will be turned off when not in use to reduce energy consumption.

- We will limit the number of vehicles deployed to the site to ensure only the minimum amount required is used.
- Idling of equipment and vehicles will be prohibited when not in use or required to reduce fossil fuel consumption.
- An electronic network for data transfers, deliverables, and document preparation will be established between all project team members to eliminate unnecessary printing, thus reducing ink, paper, and energy needs.
- We are proposing the use of direct-push technology (DPT) for the advancement of soil borings, which is 50-60% more time efficient than rotary drill rigs and avoids excess drill cuttings that require assessment and disposal as an investigation-derived waste (IDW). Where DPT does not yield good sample recovery, an excavator will be used to collect soil samples.
- Generated soil cuttings from drilling activities and excavated soil from the test pits will be isolated and spoiled on-site upon confirmation from laboratory analysis that they are not contaminated. For IDW requiring special disposal, the nearest permitted facility will be utilized.
- We will recycle cardboard boxes, beverage containers, glass sample bottles, and single-use plastic bags. Non-disposable coolers will be utilized to ensure they may be used over and over again.

## APPENDICES

# Appendix 1

## Site Vicinity Map



Appendix 1 - Site Vicinity Map  
Former Central School Properties  
400 Clinton Street  
Ottawa, Illinois 61350

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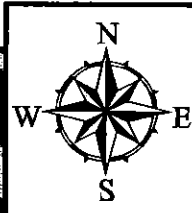
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ROCHELLE, IL SPRINGFIELD, IL  
MONROE, WI

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## Appendix 2

### Site Plan



Appendix 2 - Site Plan  
Former Central School Properties  
400 Clinton Street  
Ottawa, Illinois 61350

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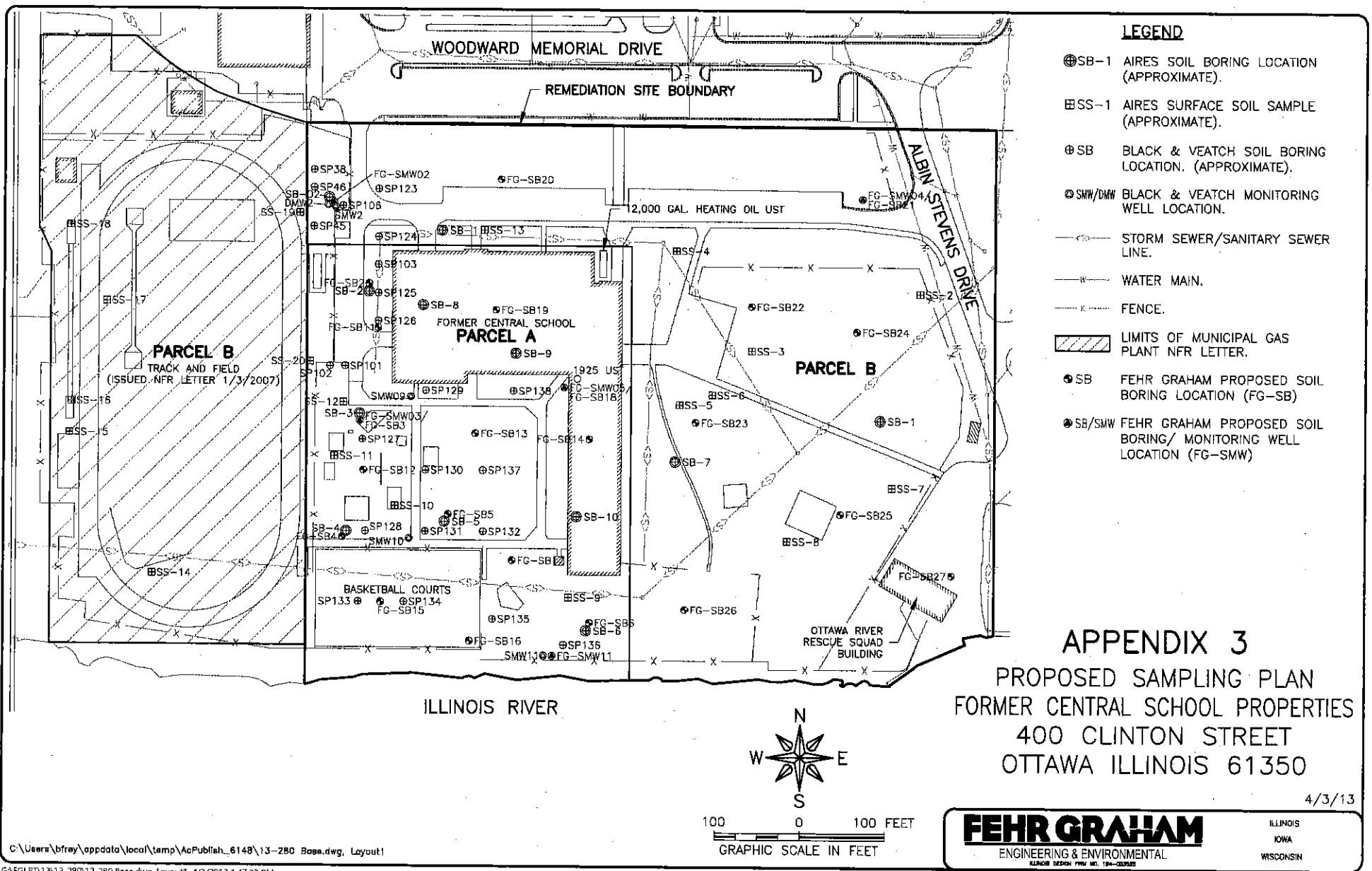
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## Appendix 3

### Proposed Sampling Plan



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